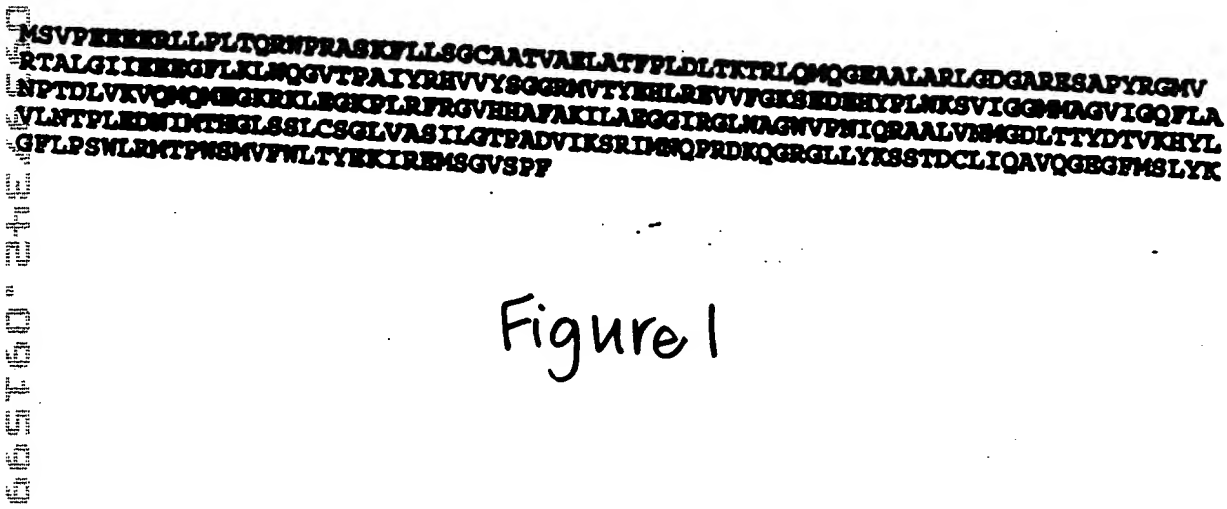

Figure 1

CCGAGCTCGGATCCCGTTATCGTCTTGCGCTACTGCTGA
(start)ATGTCCGTCCCGGAGGAGGAGGAGAGGCTTTTGCCGCTGACCCAGAGATGGCCCCGAGCGAGCAA
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CTCCAAATGCAAGGAGAAGCAGCTCTTGCTCGGTTGGGAGACGGTGCAAGAGAATCTGCCCCCTATAGGGGAA
TGGTGCGCACAGCCCTAGGGATCATTGAAGAGGAAGGCTTTCTAAAGCTTTGGCAAGGAGTGACACCCGCCAT
TTACAGACACGTAGTGTATTCTGGAGGTCGAATGGTCACATATGAACATCTCCGAGAGGTTGTGTTTGGCAAA
AGTGAAGATGAGCATTATCCCCTTTGGAAATCAGTCATTGGAGGGATGATGGCTGGTGTTATTGGCCAGTTTT
TAGCCAATCCAACTGACCTAGTGAAGGTTCAGATGCAAATGGAAGGAAAAAGGAAACTGGAAGGAAAACCATT
GCGATTTCGTGGTGTACATCATGCATTTGCAAAAATCTTAGCTGAAGGAGGAATACGAGGGCTTTGGGCAGGC
TGGGTACCCAATATACAAAGAGCAGCACTGGTGAATATGGGAGATTTAACCACTTATGATACAGTGAAACACT
ACTTGGTATTGAATACACCACTTGAGGACAATATCATGACTCACGGTTTATCAAGTTTATGTTCTGGACTGGT
AGCTTCTATTCTGGGAACACCAGCCGATGTCATCAAAAGCAGAATAATGAATCAACCACGAGATAAACAAGGA
AGGGGACTTTTGTATAAATCATCGACTGACTGCTTGATTCAGGCTGTTCAAGGTGAAGGATTCATGAGTCTAT
ATAAAGGCTTTTTACCATCTTGGCTGAGAATGACCCCTTGGTCAATGGTGTTCTGGCTTACTTATGAAAAAAT
CAGAGAGATGAGTGGAGTCAGTCCATTTTAA
(stop)GAATTCTGCAGATATCCATCACACTGGC

Figure 2

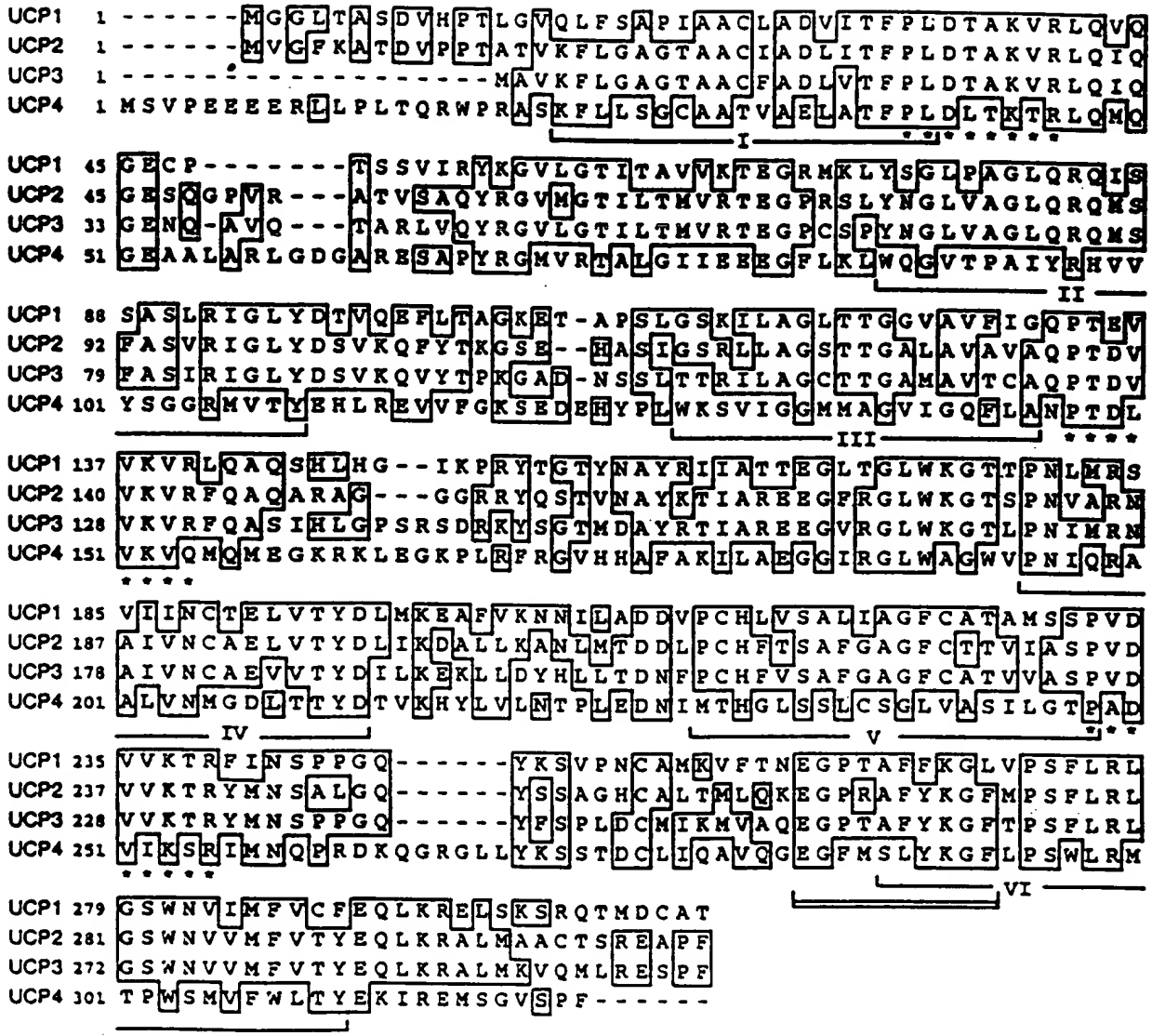

UCP1 1 ------MGGLTASDVHPTLGVQLFSAPIAACLADVITFPLDTAKVRLQVQ
UCP2 1 ------MVGFKATDVPPTATVKFLGAGTAACIADLITFPLDTAKVRLQIQ
UCP3 1 ----------MAVKFLGAGTAACFADLVTFPLDTAKVRLQIQ
UCP4 1 MSVPEEEERLLPLTQRWPRASKFLLSGCAATVAELATFPLDLTKTRLQMQ
I
UCP1 45 GECP-------TSSVIRYKGVLGTITAVVKTEGRMKLYSGLPAGLQRQISF
UCP2 45 GESQGPVR---ATVSAQYRGVMGTILTMVRTEGFRSLYNGLVAGLQRQMSF
UCP3 33 GENQ-AVQ---TARLVQYRGVLGTILTMVRTEGPCSPYNGLVAGLQRQMSF
UCP4 51 GEAALARLGDGARESAPYRGMVRTALGIIEEEGFLKLWQGVTPAIYRHVV
II
UCP1 88 SASLRIGLYDTVQEFLTAGKET-APSLGSKILAGLTTGGVAVFIGQPTEV
UCP2 92 FASVRIGLYDSVKQFYTKGSE--HASIGSRLLAGSTTGALAVAVAQPTDV
UCP3 79 FASIRIGLYDSVKQVYTPKGAD-NSSLTTRILAGCTTGAMAVTCAQPTDV
UCP4 101 YSGGRMVTYEHLREVVFGKSEDEHYPLWKSVIGGMMAGVIGQFLANPTDL
III
UCP1 137 VKVRLQAQSHLHG--IKPRYTGTYNAYRIIATTEGLTGLWKGTTPNLMRS
UCP2 140 VKVRFQAQARAG---GGRRYQSTVNAYKTIAREEGFRGLWKGTSPNVARM
UCP3 128 VKVRFQASIHLGPSRSDRKYSGTMDAYRTIAREEGVRGLWKGTLPNIMRM
UCP4 151 VKVQMQMEGKRKLEGKPLRFRGVHHAFAKILAEGGIRGLWAGWVPNIQRA
IV
V
UCP1 185 VIINCTELVTYDLMKEAFVKNNILADDVPCHLVSALIAGFCATAMSSPVD
UCP2 187 AIVNCAELVTYDLIKDALLKANLMTDDLPCHFTSAFGAGFCTTVIASPVD
UCP3 178 AIVNCAEVVTYDILKEKLLDYHLLTDNFPCHFVSAFGAGFCATVVASPVD
UCP4 201 ALVNMGDLTTYDTVKHYLVLNTPLEDNIMTHGLSSLCSGLVASILGTPAD
VI
UCP1 235 VVKTRFINSPPGQ------YKSVPNCAMKVFTNEGPTAFFKGLVPSFLRL
UCP2 237 VVKTRYMNSALGQ------YSSAGHCALTMLQKEGPRAFYKGFMPSFLRL
UCP3 228 VVKTRYMNSPPGQ------YFSPLDCMIKMVAQEGPTAFYKGFTPSFLRL
UCP4 251 VIKSRIMNQPRDKQGRGLLYKSSTDCLIQAVQGEGFMSLYKGFLPSWLRM
UCP1 279 GSWNVIMFVCFEQLKRELSKSRQTMDCAT
UCP2 281 GSWNVVMFVTYEQLKRALMAACTSREAPF
UCP3 272 GSWNVVMFVTYEQLKRALMKVQMLRESPF
UCP4 301 TPWSMVFWLTYEKIREMSGVSPF------

Figure 3

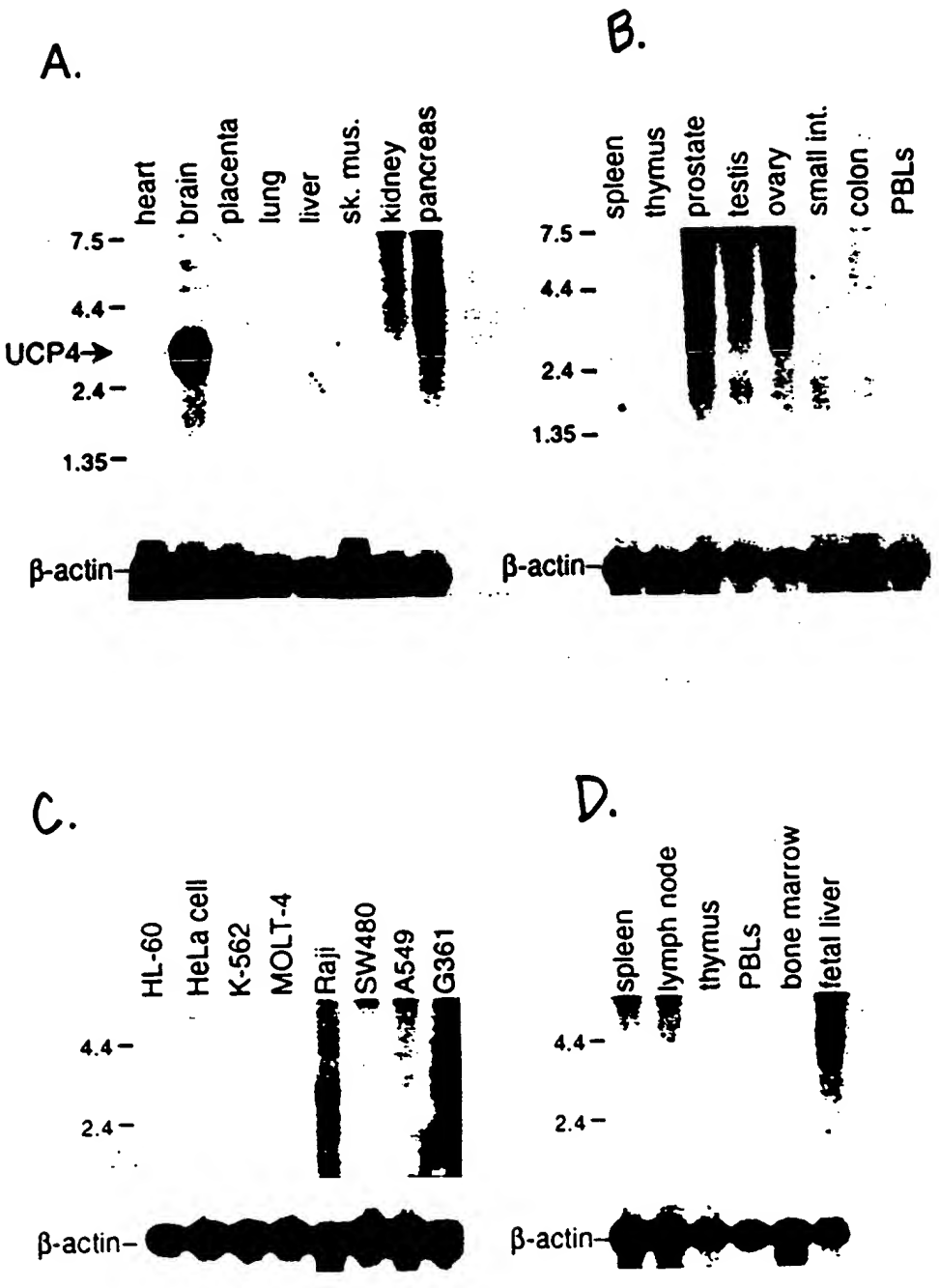
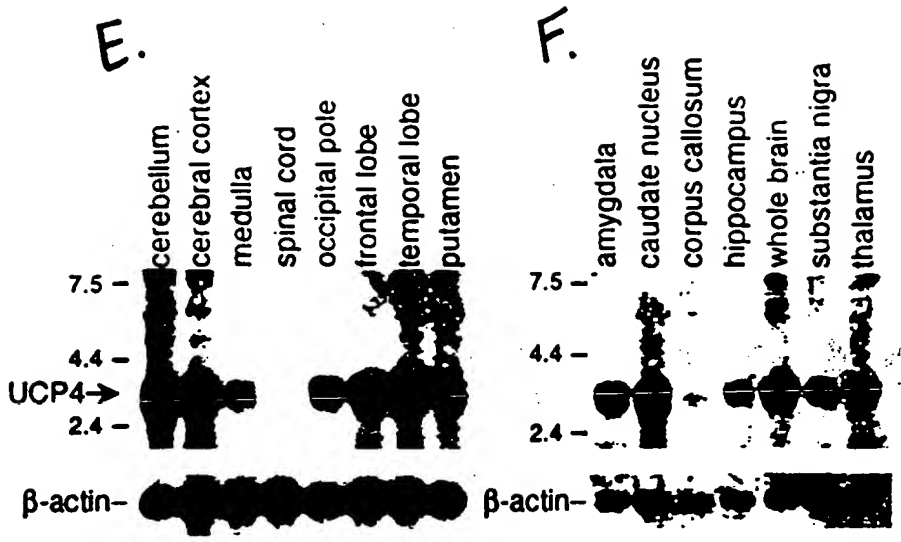


Figure 4



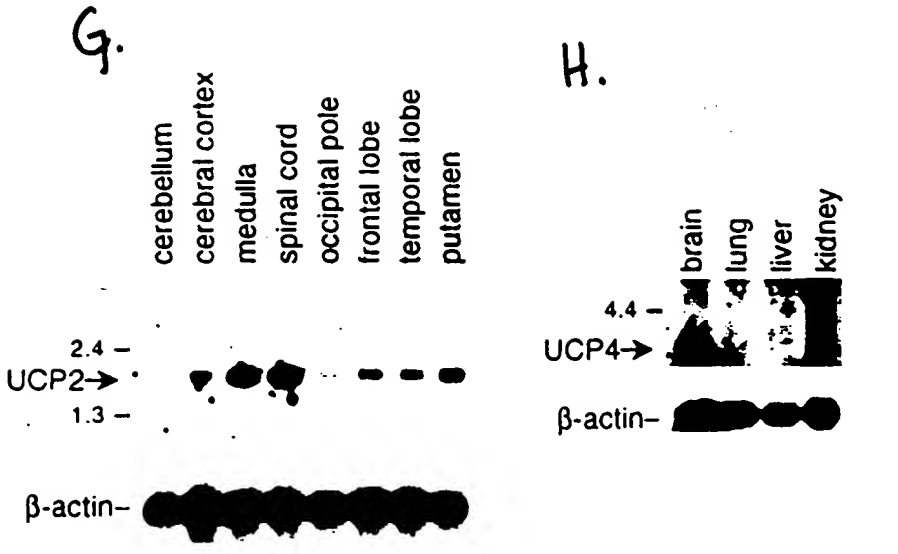


Figure 4

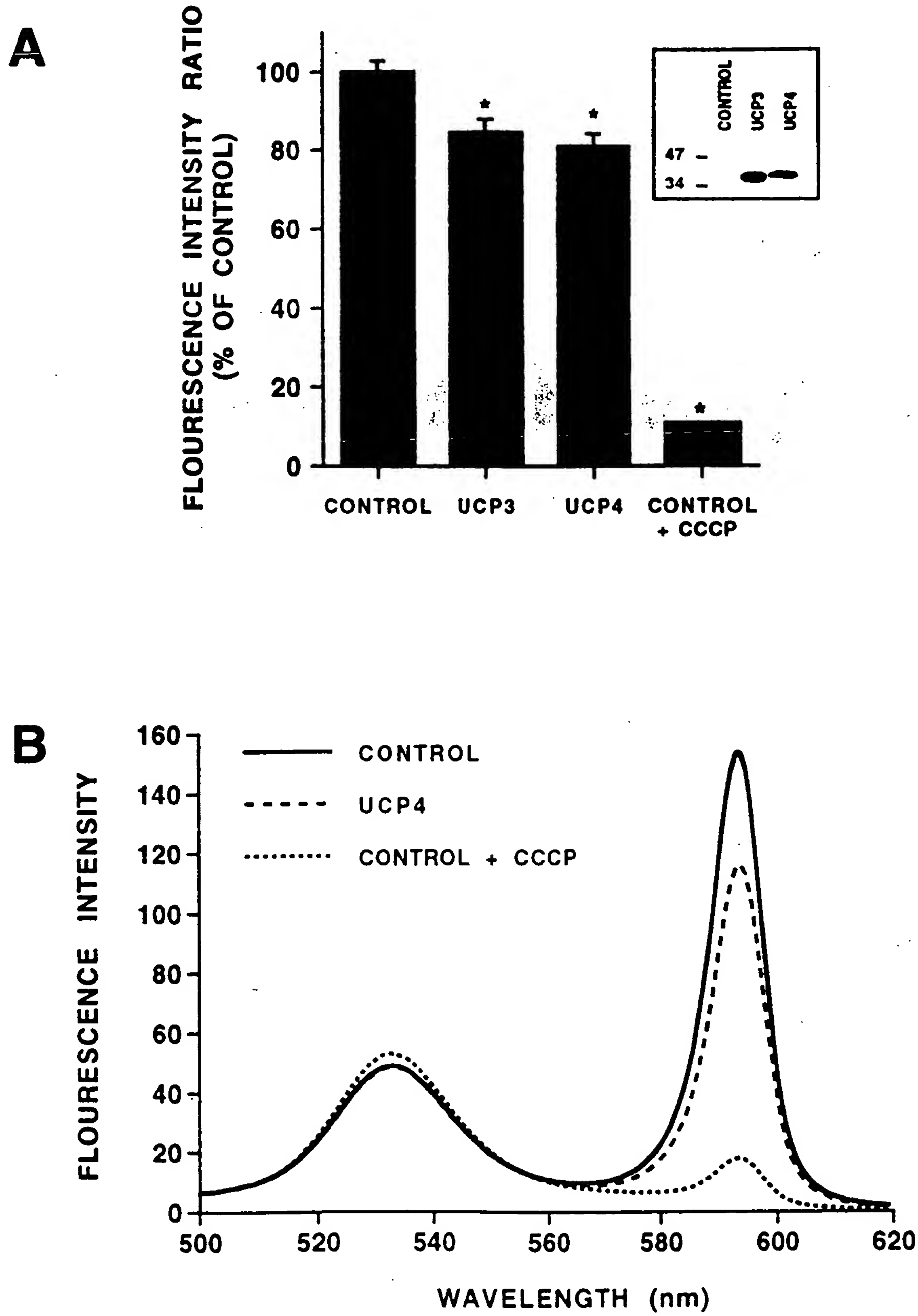

A
FLOURESCENCE INTENSITY RATIO (% OF CONTROL)
100
80
60
40
20
0
*
CONTROL
UCP3
UCP4
CONTROL + CCCP
CONTROL
UCP3
UCP4
47
34
B
FLOURESCENCE INTENSITY
160
140
120
100
80
60
40
20
0
CONTROL
UCP4
CONTROL + CCCP
500
520
540
560
580
600
620
WAVELENGTH (nm)

Figure 5

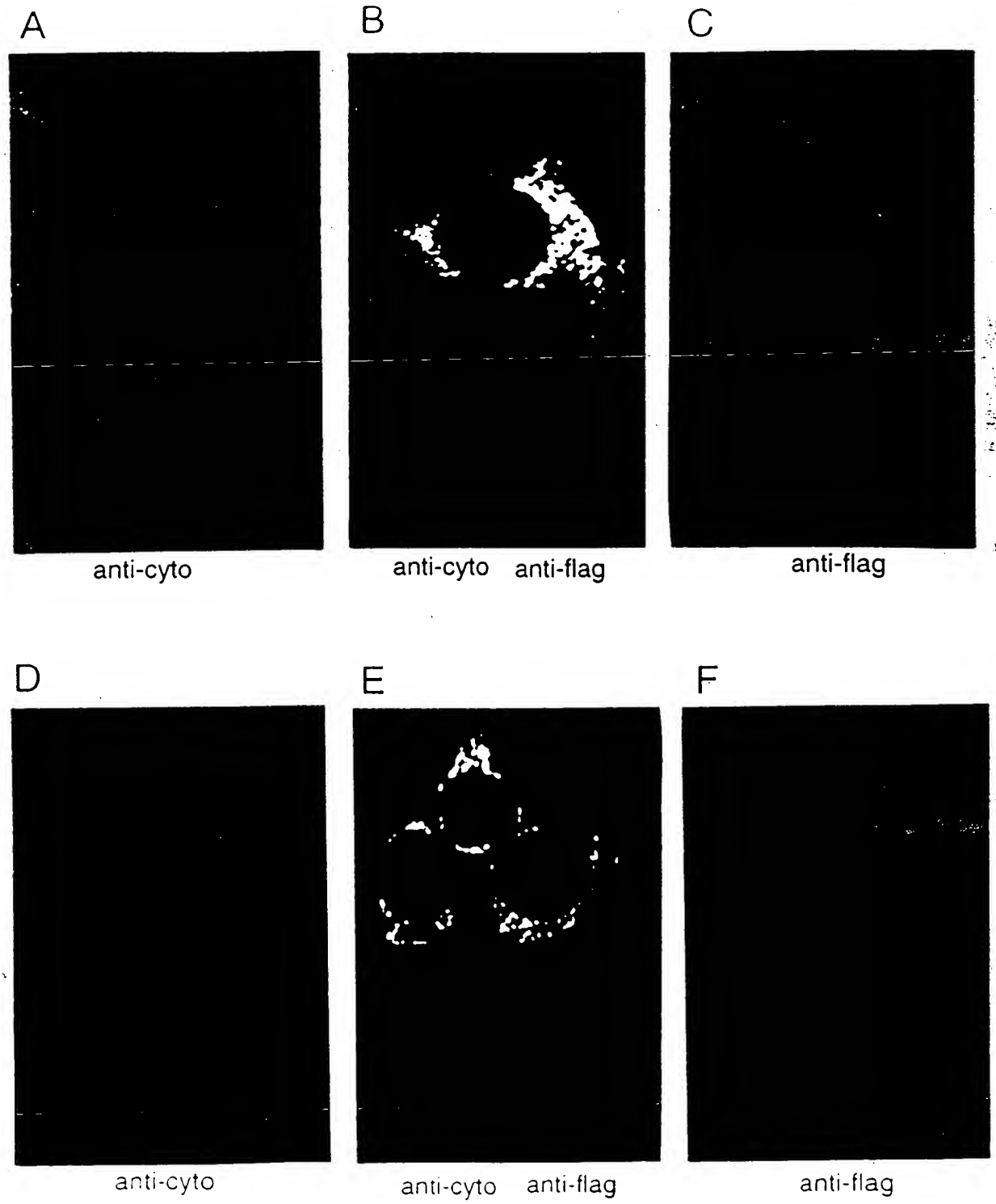

A
B
C
anti-cyto
anti-cyto anti-flag
anti-flag
D
E
F
anti-cyto
anti-cyto anti-flag
anti-flag

Figure 6

CGTTATCGTCTTGCGCTACTGCTGAATGTCCGTCCCGGAGGAGGAGGAGAGGCTTTTGCCGCTGACCCAGAG
ATGGCCCCGAGCGAGCAAATTCCTACTGTCCGGCTGCGCGGCTACCGTGGCCGAGCTAGCAACCTTTCCCCTG
GATCTCACAAAAACTCGACTCCAAATGCAAGGAGAAGCAGCTCTTGCTCGGTTGGAGACGGTGCAAGAGAAT
CTGCCCCCTATAGGGGAATGGTGCGCACAGCCCTAGGGATCATTGAAGAGGAAGGCTTTCTAAAGCTTTGGCA
AGGAGTGACACCCGCCATTTACAGACACGTAGTTATTTCTGGAGGTCGAATGGTCACATATGAACATCTCCGA
GAGGTTGTGTTTGGCAAAAGTGAAGATGAGCATTATCCCCTTTGGAAATCAGTCATTGGAGGGATGATGGCTG
GTGTTATTGGCCAGTTTTTAGCCAATCCAACTGACCTAGTGAAGGTTCAGATGCAAATGGAAGGAAAAAGGAA
ACTGGAAGGAAAACCATTGCGATTTCGTGGTGTACATCATGCATTTGCAAAAATCTTAGCTGAAGGAGGAATA
CGAAGGCTTTGGGCAGGCTGGGTACCCAATATACAAAGAGCAGCACTGGTGAATATGGGAGATTTAACCACTT
ATGATACAGTGAAACACTACTTGGTATTGAATACACCACTTGAGGACAATATCATGACTCACGGTTTATCAAG
TTTATGTTCTGGACTGGTAGCTTCTATTCTGGGAACACCAGCCGATGTCATCAAAAGCAGAATAATGAATCAA
CCACGAGATAAACAAGGAAGGGGACTTTTGTATAAATCATCGACTGACTGCTTGATTCAGGCTGTTCAAGGTG
AAGGATTCATGAGTCTATATAAAGGCTTTTTACCATCTTGGCTGAGAATGACCCCTTGGTCAATGGTGTTCTG
GCTTACTTATGAAAAAATCAGAGAGATGAGTGGAGTCAGTCCATTTTAAACCCCTAAAGATGCAACCCTTAAA
GATACAGTGTTCAGTATTATTGAAATATGGGCATCTGCAACACATACCCCCTATTATTTCTACCTCTTTAGGA
AGACACCTATTCCACAGAGACTGATTTATAGGGGGCAGCACTTTATTTTTTTCTGGAAACCCAAGTTCTCTTT
GACTCCTCTTTTTGTCCAAAAGTGATCTGGTCGGATCTCACAAGGCCATCCAATGAGACCCCGNACAGCATTT
TCTAAAGA

Figure 7

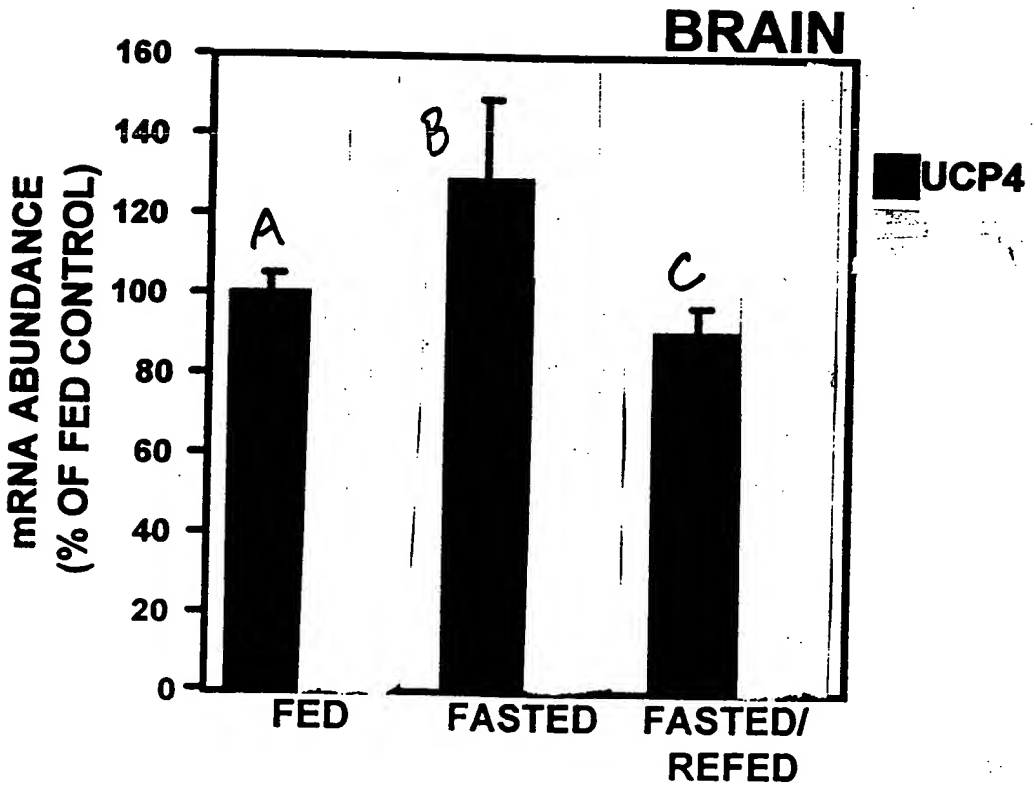
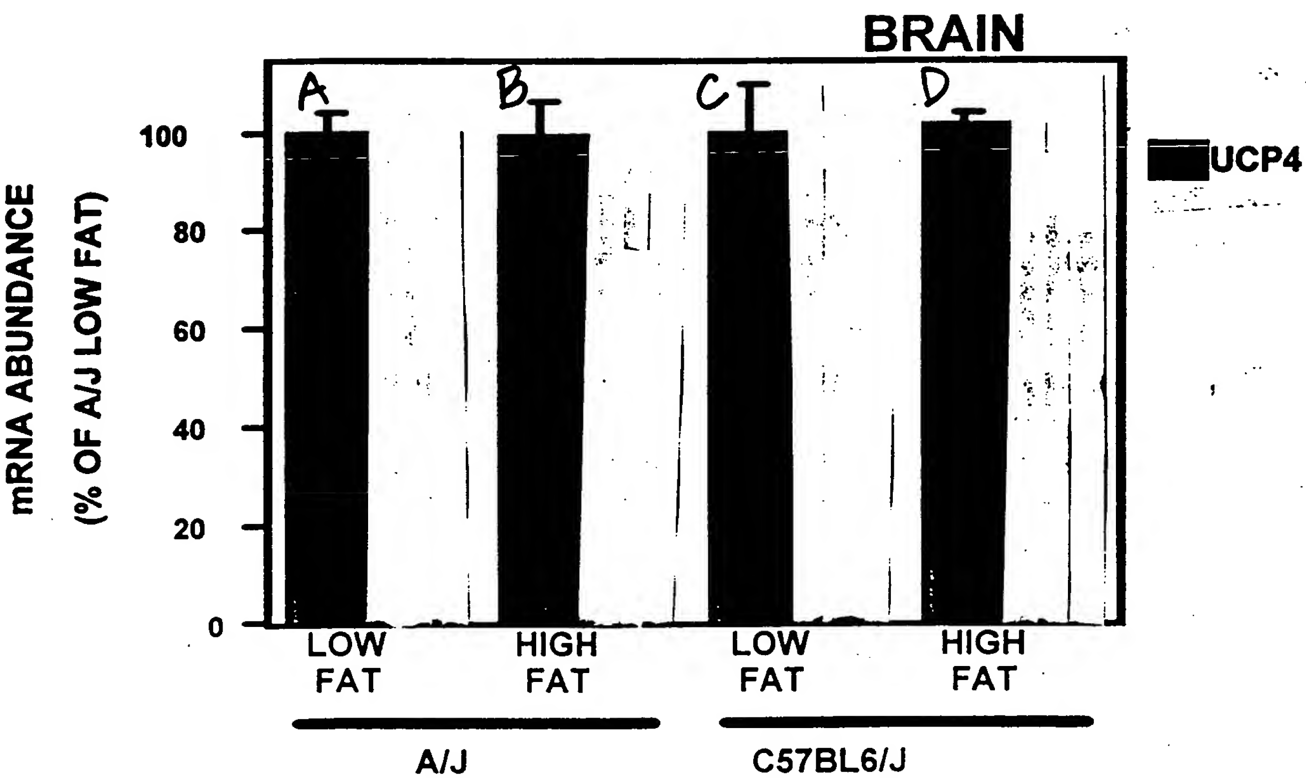

BRAIN
mRNA ABUNDANCE
(% OF FED CONTROL)
160
140
120
100
80
60
40
20
0
A
B
C
UCP4
FED
FASTED
FASTED/
REFED

FIGURE 8



BRAIN
A
B
C
D
100
80
60
40
20
0
mRNA ABUNDANCE
(% OF A/J LOW FAT)
UCP4
LOW FAT
HIGH FAT
LOW FAT
HIGH FAT
A/J
C57BL6/J

FIGURE 9

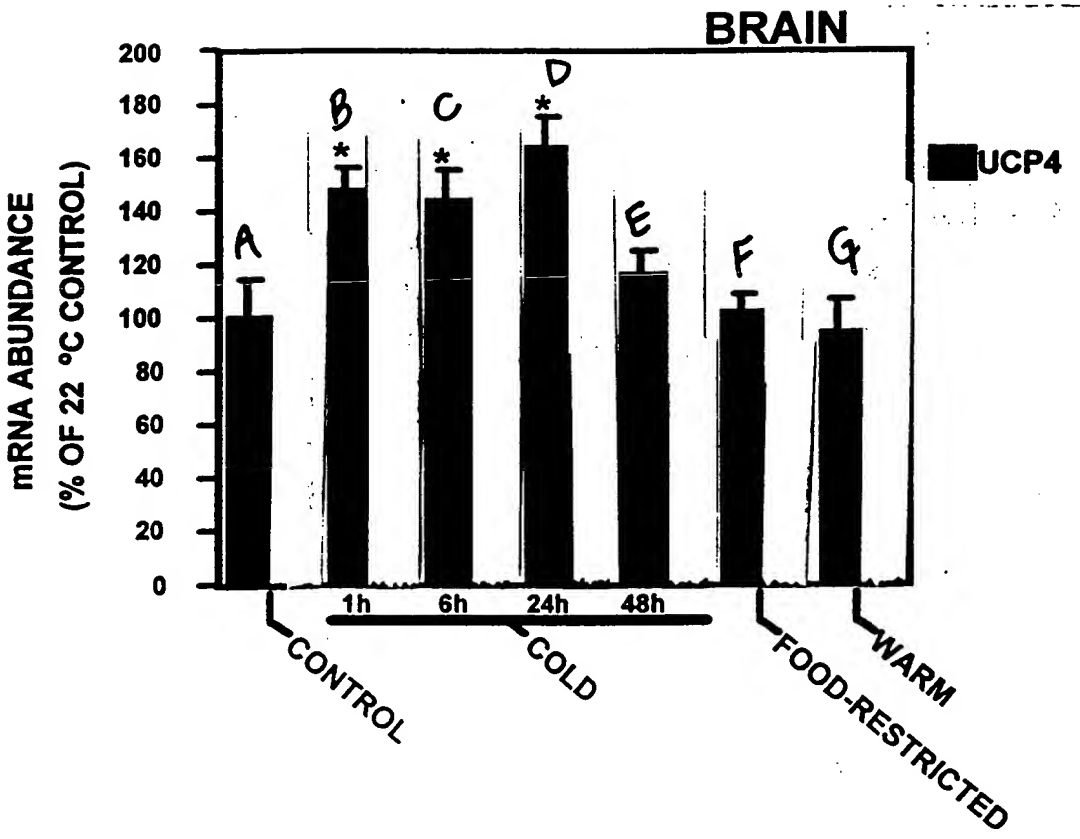

BRAIN
mRNA ABUNDANCE
(% OF 22 °C CONTROL)
200
180
160
140
120
100
80
60
40
20
0
A
B
C
D
E
F
G
*
*
*
UCP4
1h
6h
24h
48h
CONTROL
COLD
FOOD-RESTRICTED
WARM

FIGURE 10